

TROPICAL RAINFALL MEASURING MISSION

May 10, 1999 - May 16, 1999

DOY 130 - 136

Day of Mission 529 - 535

TRMM MISSION OPERATIONS

- TRMM is flying in the -X Forward direction as of 99-135, at 12:46:25z.
- The next Yaw maneuver is scheduled for May 30 (99-150).
- Delta-V maneuver #99 is scheduled for May 21 (99-141) using the ISP thrusters.
- The Beta angle range for DOY 137 to 143 is -4.0° to -14.3° , peaking at -14.5 on 99-142.

TRMM SUBSYSTEM OPERATIONS

Attitude Control System

Delta-V maneuver #97 was successfully conducted on 99-131 at 15:25:20z and 16:11:07z, for durations of 43.00 and 17.25 seconds respectively, using the LBS thrusters. The off-modulation of the +Pitch thruster (#2) was 23.55% and 20.29% respectively (76.45% and 79.71% on time). The -Yaw off-modulation (thruster #1) for burn 1 was 8.43% (91.57% on-time). The remaining fuel is 732.006 kg and the final apogee and perigee height is 354.83 km x 347.53 km.

A Yaw maneuver from +X to -X was performed on 99-135 at 12:46:25z.

Delta-V maneuver #98 was successfully conducted on 99-135 at 16:55:00z and 17:41:44z, for durations of 41.75 and 25.25 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) was 36.83% and 31.19% respectively (63.17% and 68.81% on time). The remaining fuel is 730.445 kg and the final apogee and perigee height is 355.00 km x 347.37 km.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard continues to drift in the negative direction. It remains at x759, with a current drift rate of $-3.95 \mu\text{s/hr}$. The UTCF was adjusted by $-895 \mu\text{s}$ on 99-132, at 00:20:39z, and is now 31535996.865099 sec with a current drift value of -441 sec .

EDAC multi-bit errors occurred on 99-131 at 14:49:09z and 99-134 at 01:07:22z and 01:07:34z.

Q-Channel Restarts occurred on 99-133 at 07:25:09z and 17:07:45z, 99-134 at 06:06:03z, 99-135 at 16:54:33z, and 99-136 at 01:04:41z, 13:54:58z, and 13:55:09z.

A software bus send error occurred on 99-133 at 04:31:10z due to VIRS event #20.

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Trending is being performed on the Catbed temperatures to determine if the pre-burn power-on duration can be reduced: it is currently 91 minutes. This is an attempt to reduce the load on the power system during Delta-V maneuvers.

Power Subsystem

The Power subsystem operated nominally during this period.

The SOC counters have not reached 100% SOC since 99-131.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem has performed nominally during this period.

A late acquisition occurred on 99-132 during the 08:25z event on 171/SA1 (Late Acq #32).

Transponder-2 did not lock on the PN long code for the entire 12:15z event on 99-132.

SPACECRAFT INSTRUMENTS

CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. Work continues in creating the new Tables and RTSs required, and testing will begin week of May 17th.

The next instrument power on and science collection period is planned for May 17th through 19th.

LIS

LIS performed nominally during this time period.

A command request from MSFC to reset the instrument and configure it back to nominal was performed on 99-132.

PR

On 99-130 two External Calibrations were not executed (Event #102) because the commands were not placed in the stored command load. The Japanese were notified and a replacement calibration was scheduled on 99-132 at 08:21:58z.

An External calibration request was performed on 99-131 at 09:34:39z.

PR performed nominally during this time period. The list of Internal Calibration times for the week is listed below:

1999:130:02:36:12-02:38:20z
1999:131:01:24:29-01:26:41z
1999:131:17:42:08-17:47:13z
1999:133:00:35:53-00:38:02z
1999:133:16:54:03-16:58:16z
1999:133:23:24:29-23:26:43z
1999:134:23:46:56-23:49:04z
1999:135:16:05:12-16:06:30z
1999:135:22:35:23-22:37:36z
1999:136:14:55:41-14:57:57z
1999:136:22:58:18-23:00:25z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed nominally during this time period.

VIRS solar calibrations were performed on 99-134 at 05:20:14z and 08:23:04z.

The Cold Stage reached a maximum temperature of 112.63 ° K near beta 0°.

GROUND SYSTEM

Y2K testing has been completed on string 3. String 3 operational readiness testing will be performed after completion of the End-to-End test. String 2 will remain the prime Mission Planning string for normal spacecraft operations until successful completion of the End-to-End test.

TRMM participated in an NCC98 UPS test with JSC on 99-132 to exercise the scheduling ability during STS missions.

Event Reports

102 : Missed PR External Calibrations (see PR section).

Generic Late Acquisition Reports (for TTRs 19639)

32 TD171/SA1: 99-132 at 08:25z event 1 minute 14 seconds.

New Anomaly

No new Anomaly Reports were opened during this week.

Recurring Open Anomalies

No recurring open Anomaly Reports occurred during this week.

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